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AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM

(THROUGH 31 JANUARY 1968)

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Prepared Jointly by
The Central Intelligence Agency
and
The Defense Intelligence Agency



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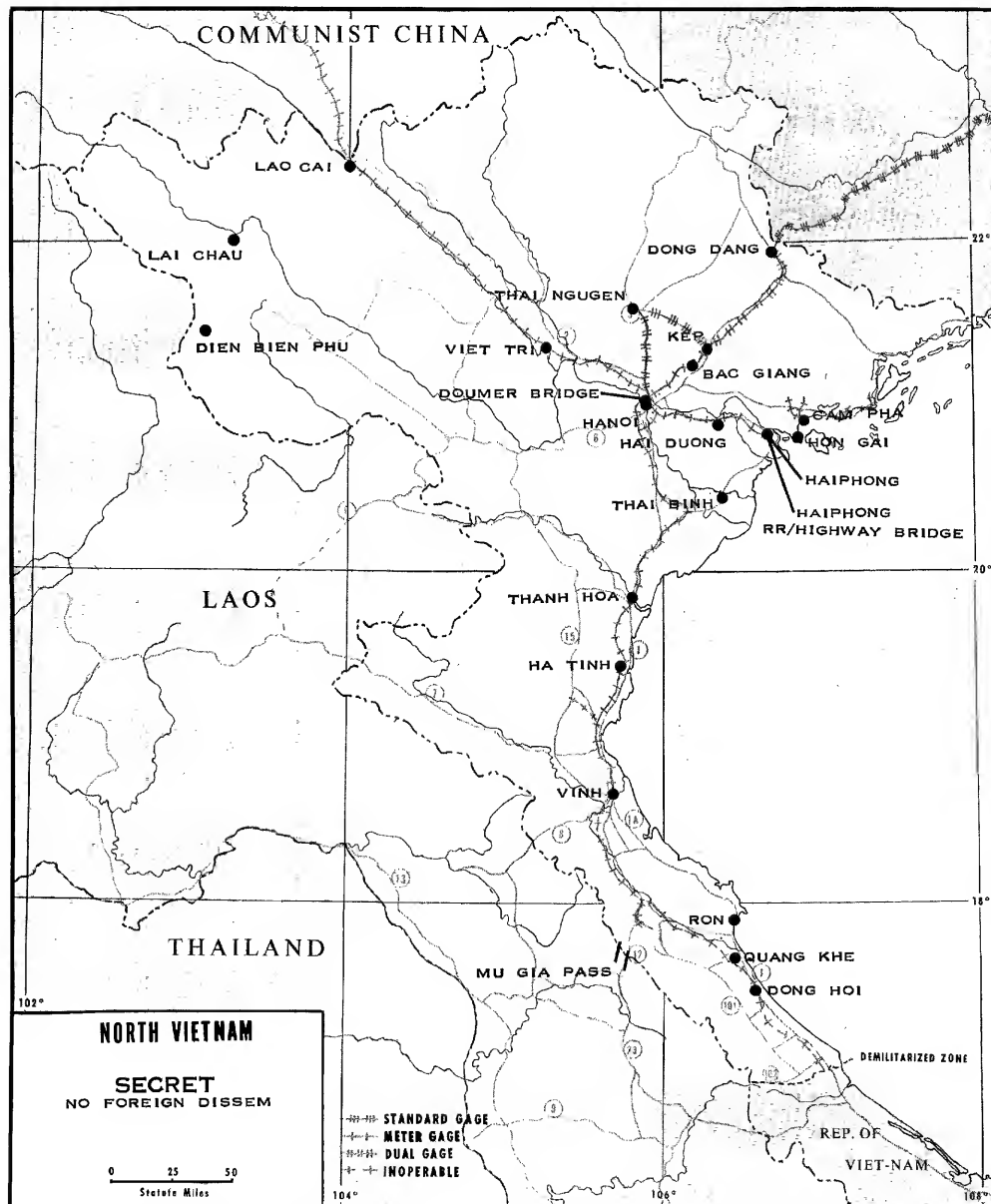


AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM (THROUGH 31 JANUARY 1968)

FOREWORD

This report is prepared on a monthly basis at the request of the Secretary of Defense for an evaluation of certain effects of the ROLLING THUNDER program. The report covers three general areas of concern: Effects on Military Targets; Leadership and Public Reactions; and Effects on the NVN Economy. The discussion of political effects is limited to those developments within North Vietnam which relate to Hanoi's attitude toward continuing the war and the effects the ROLLING THUNDER attack has on civilian morale in North Vietnam.

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AN APPRAISAL OF THE BOMBING OF NORTH VIETNAM
THROUGH JANUARY 1968

SUMMARY


1. (S/NFD) A combination of bad weather and operational restrictions continued to inhibit the ROLLING THUNDER effort against fixed targets in North Vietnam, particularly the key targets in the Northeast. Most of the effort during January was concentrated on transportation facilities and equipment in the Panhandle.

2. (S/NFD) The over-all capability of the transport system was seriously disrupted by the continued interdiction of the Doumer Bridge and by attacks against lines of communication around Haiphong and south from Hanoi. Despite the damage to the transport system, the amount of supplies moved from North Vietnam into the Laos Panhandle in recent weeks has increased significantly over the high level of the last four months of 1967.

3. (S/NFD) North Vietnam's major industrial facilities continue to be either inoperative or operating at a fraction of their pre-strike capacity. About a third of the total electric generating capacity is in operation, a slight increase over December. Powerplants in the main Hanoi/Haiphong network, at present in partial operation, can provide 25 to 30 per cent of the network's pre-strike capacity.

4. (S/NFD) Seaborne imports during January reached the highest level since the beginning of the bombing, continuing a trend that started in October. This level of imports may be the result of a North Vietnamese concern that the US will mine Haiphong or will step up its air activity over North Vietnam.

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5. (S/NFD) The cumulative measurable damage inflicted on the economy and the military establishment is estimated at \$425 million. The airstrikes have degraded North Vietnam's capability for sustained large-scale conventional military operations in South Vietnam. Nevertheless, recent events demonstrate that North Vietnam has the capability to support military activities in the South at increased levels of combat.

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Effects on Military Targets

1. (S/NFD) Air activity against targets in North Vietnam continued to be hindered during January by adverse conditions. Poor flying conditions and operational restraints limited attacks in the Northeast. Strikes in the South were concentrated against transportation facilities and equipment. Airfields, SAM and AAA sites, storage areas, artillery positions, and troop concentrations were also attacked.
2. (S/NFD) Traffic in the Hanoi area remains disrupted by the interdicted Doumer Bridge over the Red River. This bridge is currently more severely damaged than ever, and repair activity has not been noted, although stockpiles of construction materials nearby may indicate repairs will soon begin. Truck and inland water transportation, although less efficient, can handle the diverted traffic in the Hanoi area until the bridge is repaired. Western sources in Hanoi indicated in late January that the alternates were being used and that a high level of trucking was continuing.
3. (S/NFD) Traffic in the Haiphong area also continues to be disrupted. Through rail service to and from the port remains interdicted at the Haiphong Railroad/Highway Bridge. Comparative photography of the area indicates that the North Vietnamese are moving some goods from the port via the rail pontoon bypass bridge or by the periodic emplacement of a removable span in the original bridge. Two of the three highway bridges attacked and destroyed in September have been

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reconstructed as cable bridges. One of these, the Haiphong Highway Bridge, is probably capable of handling truck traffic; the other is for pedestrian traffic. Goods can continue to move from the port by truck over at least 10 highway bypasses and by water.

4. (S/NFD) Attacks against the railroad system in January were concentrated on the line south of Hanoi. The North Vietnamese had reduced the number of interdictions on this line to two by early January, but the increased number of strikes probably resulted in greater disruption to the line during most of the month. Photography in late January confirmed that the Thanh Hoa Railroad/Highway Bridge was severely damaged and temporarily unserviceable for rail and highway traffic. Concentrations of rolling stock and trains observed on the line, however, indicate that shuttle service was continuing as far as Thanh Hoa. During January, destruction and damage of railroad rolling stock reported throughout North Vietnam increased over the November and December levels and was comparable to the monthly average for 1967.

5. (S/NFD) Few strikes were conducted against the other rail lines during January. Most of the effort on the Hanoi-Haiphong line was directed against the rail bridges and bypasses at Hai Duong. Pilots reported destroying the Hai Duong Railroad/Highway Bridge East, which should slow down the movement of goods; however, several serviceable highway and rail bypasses are available. Rail traffic on the Hanoi-Thai Nguyen line was disrupted for about 10 days by the interdiction

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of the Ha Gia Railroad Bridge, although a highway bypass was available. Strikes against the Lang Dang Railroad Yards reportedly resulted in an interdiction of the Dong Dang line for about three days. On the Lao Cai line the Viet Tri Railroad/Highway Bridge remained out of service, with shuttling required.

6. (S/NFD) Photography of 12 January indicates that the North Vietnamese are converting the remaining portions of the Hanoi-Dong Dang line south of Kep to dual gauge. Two areas of activity were noted in photography, one just south of Kep and the other at Bac Giang.

7. (S/NFD) Airstrikes against the highway system were concentrated south of Thanh Hoa, primarily on Highway Routes 1A, 15, and secondary roads leading toward the DMZ and the Lao border. A number of important bridges were reported destroyed or heavily damaged. Naval bombardment of Route 1A and its inland alternates from Thanh Hoa to the DMZ probably disrupted truck traffic north and south of Ron.

8. (S/NFD) Pilot reports of sightings and destruction or damage of motor vehicles increased during January as compared with December. Truck convoy activity continued in the southern areas of North Vietnam, principally near the transshipment and storage areas at Ron, Quang Khe, Dong Hoi, and along Routes 15 and 151 which lead to the Mu Gia Pass.

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9. (S/NFD) During the Tet holiday period of 29 and 30 January, a large number of trucks (approximately 500) were detected on coastal Routes 1A, 101, 107, and inland Routes 15 and 151, somewhat less than during the Christmas and New Year's truces. The largest concentration noted -- 150 vehicles -- was parked immediately south of Quang Khe. Another 75 vehicles were observed moving south along Route 15 toward the Mu Gia Pass. Vehicle activity during the Tet period was probably more extensive than that reported, however, as limited reconnaissance coverage and unquantified sightings of convoys preclude a more precise assessment.

10. (S/NFD) Supplies moved into the Lao Panhandle from North Vietnam in January and the first week in February were significantly higher in volume than the high level moved in the latter part of 1967. The number of trucks moving toward Laos on Route 15 during January could have moved about 55 metric tons of supplies per day. During the first week of February, traffic moving south on this route was nearly three times the January level. Although there is no firm evidence of the number of trucks moving from North Vietnam on the other truck route into the Lao Panhandle, Route 137/912, supplies moved on this route could have been at least equal to the tonnage moved on Route 15.

11. (S/NFD) Photography during the past month revealed significant road construction activity. The new Route 415, which

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will link the Ning-Ming area of China with Haiphong, is nearing completion. This will provide another road connection with China and will increase the total North Vietnamese highway capacity from China by nearly 1,000 metric tons per day. Extensive road improvements were also under way along Route 191 south of Lai Chau toward Dien Bien Phu. The entire length of this route has numerous connecting side roads which could be used as truck parks.

12. (S/NFD) Photography shows an increasing use of watercraft in the Haiphong area; coverage on 6 January revealed 439 craft, compared with 396 on 15 December and 321 on 14 October. It is estimated that an increasing amount of the dry cargo imports are being offloaded into watercraft and that all of the POL is handled by barges.

13. (S/NFD) Strikes were conducted against 18 waterway transshipment points during January. At Thanh Hoa and Thai Binh, large secondary explosions and numerous POL-type fires were reported. Aerial operations against watercraft resulted in significant increases in the number of craft reported destroyed and damaged.

14. (S/NFD) North Vietnamese air defense activity was at a relatively low level, reflecting the reduced US air effort against heavily defended targets around Hanoi and Haiphong. Enemy fighter operations continued to follow the recent pattern of MIG-21s establishing an outer barrier and MIG-17s flying patrols near Hanoi. Only 122 surface-to-air missiles were fired during the month. Thirty-one US

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aircraft were lost, six to MIGs, four to SAMs, and the remaining 21 to AAA or unknown causes. Three MIG-17s were shot down in air-to-air engagements.

15. (S/NFD) SAM activity was again noted in the Thanh Hoa area after seven months of infrequent indications of SAM presence. January photography revealed a cluster of four new sites, two of which were occupied, within a two-mile area close to the beach. [REDACTED] at least two additional units still active in the vicinity of Vinh, and photography revealed a firing location of a SAM unit operating in the DMZ. B-52s in the DMZ area were again taken under SAM attack on 11 January, when four SAMs failed to hit their targets.

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16. (S/NFD) The disruptions of the vital lines of communication into Hanoi from the north, out of Haiphong, and south from Thanh Hoa to the DMZ continue to make the distribution of military and economic supplies more time-consuming and costly by forcing the use of less efficient alternate routes. Poor flying conditions enabled the North Vietnamese to move increased tonnages to the DMZ and Laos and eventually to South Vietnam. The cumulative effects of the strikes have degraded North Vietnam's capability for sustained large-scale conventional military operations against South Vietnam. Nevertheless, recent events demonstrate that North Vietnam has the capability to support military activities in South Vietnam at increased levels of combat.

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Leadership and Public Reactions

17. (S/NFD) The Hanoi leadership continues to hold out the prospect of talks with the US after a bombing halt, probably in preparation for eventually employing a "fight-talk" tactic. In a recent interview, Foreign Minister Trinh seemed to be more direct in relating such talks to the fighting in the South. He said that post-bombing talks could include "problems in connection with the settlement of the Vietnam problem on the basis of the 1954 Geneva agreements," as well as "other questions which would be raised by the two parties." This is the least ambiguous North Vietnamese public pronouncement of a willingness to discuss the entire question of Vietnam in such talks. At the same time, the Foreign Minister also stressed Hanoi's usual hard-line terms for a settlement of the war.

18. (S/NFD) Morale appears to be holding up, despite the continuing pressures of the bombing and the shortages, hardships, and dislocations brought on by the war. The attitude of the people in Hanoi has been reported as particularly good in recent weeks. This is probably due to the more elaborate Tet celebrations permitted by the regime and decreased airstrikes activity in the area. North Vietnam has also used the alleged Viet Cong "victories" in the south to bolster the morale of its own people.

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Effects on the Economy

19. (S/NFD) Only three of North Vietnam's industrial facilities were attacked during January; the Bac Giang and Hon Gai Thermal Powerplants and the Thai Nguyen Iron and Steel Combine. The results of these strikes are not yet known. Despite the low level of strike activity, North Vietnam's modern industrial facilities generally remained inoperative or operating at a fraction of their pre-strike capacity.

20. (S/NFD) About one-third of the country's pre-strike electric generating capacity is currently operational, a slight increase over the December level. Powerplants in the main Hanoi/Haiphong network, at present in partial operation, can provide 25 to 30 per cent of the main network's pre-strike capacity. The progress of repairs at the Thai Nguyen powerplant indicates that partial operation can be restored within a month. There is no evidence of repair work at the two Haiphong plants. The only damaged powerplant outside the main network that has been restored for operation is the small hydroelectric plant at Ban Thach, located near Thanh Hoa.

21. (S/NFD) North Vietnam apparently is increasing its petroleum stocks. More than 34,000 metric tons were imported during January, the fourth successive month in which petroleum imports have increased. An additional 21,000 tons consigned to North Vietnam were shipped from the Soviet Far East to Whampoa, China, during the month, possibly for

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transshipment at a later date. Stocks at the end of January are estimated at about 75,000 tons, equivalent to nearly 115 days of supply.

22. (S/NFD) Identified seaborne imports continued the upward trend that started in October and reached a record level of 197,000 metric tons in January. Imports of foodstuffs, nearly 60,000 tons, and of petroleum approached the highest levels since the bombing began. Miscellaneous and general cargoes, consisting primarily of construction, transportation, and industrial supplies and equipment, reached a record level of 74,000 tons. Fertilizer imports were over 25,000 tons -- more than double the monthly average for 1967 and well above the high average for 1966. Timber was imported for the first time since August. The high level of imports in January could be, in part, because of shipping schedules or because the North Vietnamese expect the US to mine Haiphong and to step-up air activity over North Vietnam.

23. (S/NFD) Identified seaborne exports in January, 43,000 metric tons, increased slightly over the December level, but remained nearly 10 per cent below the monthly average of 1967. Exports of coal increased to nearly 39,000 tons. Recent aerial photographs of Cam Pha and Hon Gai reveal a high level of activity at the coal processing plants. There continued to be no seaborne exports of apatite, cement, or pig iron.

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24. (S/NFD) The average layover time for freighters departing Haiphong in January was 15 days, the same as in December. However, 39 foreign freighters arrived in January, the largest number since the bombing began. This high number of arrivals combined with the high level of imports probably will result in an increased average layover time for ships departing in February.

25. (S/NFD) Cumulative measurable damage attributable to the ROLLING THUNDER Program through January 1968 is estimated at \$425 million as shown in Tab B.

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RESULTS OF STRIKES ON NVN TARGETS ^{a/} THRU 31 JANUARY 1968

Fixed Targets	Total Targets ^{c/}		Targets Struck						% of National Capacity Destroyed or inactive because of air strikes
	National Capacity (X 1000)	JCS ^{d/} Targeted No %	No	%	^{e/} No. of Attacks	^{b/} Strike Sorties			
Barracks	443 men	65 41.08	58	35.9	404	3208			27.04
Ammo Depots	112.6MT	18 100	18	100	118	1398			77.0
POL Storage *	208MT	13 78.0	13	96.4	91	756			83.1
Supply Depots	10550SqFt	29 42.48	25	31.2	92	925			18.98
Power Plants	192KW	20 92.1	15	85.8	113	865			68.0
Maritime Ports	8.2ST/DY	9 97	7	48	30	292			18.4
RR Yards	49.7	4 78	3	54	92	675			10.6
RR Shops		3 88	2	68	6	58			47.0
Industrial:									
Explosive Plant	1MT	1 100	1	100	20	126			100
Iron & Steel	300MT (PIG)	1 100	1	100	25	295			100
Cement Plant	600MT	1 100	1	100	1	57			100

	Total Targets						% of those targeted	
Airfields	23	12**	11**	83	132	1831	37.1	
Naval Bases	15	5	4	57	30	295	30.4	
Bridges	1561	61	59		613	5797	68.0	
Commo Install	55	5	2		2	15	20	
Radar Sites	210	5	5		80	459	62.5	
SAM Sites	221		58		12	388		
Locks and Dams	94	8	2	38.6	2	10	38.6	
Ferries	160		11		7	44		

* JCS targets only; does not include dispersed storage.

** Includes non-JCS numbered Hoa Lac Airfield.

Total Sorties: 16,307

Results ^{f/}

Armed Recce Sorties

192,851

Destroyed Damaged

Vessels 9,848 18,129
Vehicles 6,169 5,431
RR Stock 1,909 3,249

^{a/} Assessments are based on best information received and will be refined as more accurate information becomes available.

^{b/} Strike plus flak suppression sorties. Some applied to multiple targets; in this summary assigned to principal target.

^{c/} These columns are not additive, since the number of installations, both targeted and struck in some cases, apply to more than one category of targets (i.e., barracks, supply and ammo depots).

^{d/} Percentages of national capacity where appropriate.

^{e/} Does not include numerous attacks during armed recce and other missions.

^{f/} Does not include numerous installations, AA sites, bridges, etc., attacked and road and rail cuts made.

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Value of Economic and Military Damage
Attributed to the ROLLING THUNDER Program
1965 Through January 1968

<u>Economic Facilities and Equipment</u>		<u>Military Facilities and Equipment</u>	
<u>Direct Losses</u>	<u>Million US \$</u>	<u>Direct Losses</u>	<u>Million US \$</u>
Railroad/Highway Bridges	35.8 <u>a/b/</u>	Barracks	31.2 <u>a/</u>
Transportation Equipment	77.9	Ammunition Depots	5.3 <u>a/</u>
Electric Powerplants	32.9	Motor Vehicle Depots and	
Petroleum	7.5	Supply Areas	11.0 <u>a/</u>
Manufacturing Facilities	18.1	Airfields	1.9
Railroad Yards and Shops	6.2 <u>a/</u>	Radar and Communications	
Maritime Ports and Shipyards	2.7 <u>a/</u>	Sites	2.9 <u>a/</u>
Miscellaneous Armed		SAM Sites	8.7 <u>a/</u>
Reconnaissance	2.3	Naval Bases	1.9
		Aircraft	44.8
SUBTOTAL, Direct Losses	183.4	Naval Craft	4.8
		Miscellaneous Armed	
<u>Indirect Losses</u>		Reconnaissance	20.4
Exports	36.8	TOTAL, Direct Losses	132.9
Agriculture <u>c/</u>	60.5		
Fishing	11.0		
SUBTOTAL, Indirect Losses	108.3		
TOTAL, Direct & Indirect	291.7		

		<u>TOTAL</u> <u>MILLION US \$</u>	
Economic	292		
Military	133		
TOTAL	425 <u>d/</u>		

a/ Estimate is incomplete because of inadequate post-strike photography.

b/ Of the total, \$7.0 million is estimated to have been expended to date on the repair of damaged and destroyed bridges and \$28.8 million is estimated for complete restoration in the future of bridges damaged or destroyed. In addition, \$1.6 million would be required to make temporary repairs to presently unrepaired bridges.

c/ It should be noted that losses of agricultural crops are arbitrarily attributed entirely to the indirect effect of the bombing. An unknown part of these losses is in fact due to weather and other natural causes.

d/ Excluding the cost of trucks destroyed and damaged in Laos and economic and military facilities and equipment destroyed and damaged by US naval operations along the coast of southern North Vietnam.

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G-2	1 Cy
CINCPAC	2 Cys
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7AF	2 Cys
COMSEVENTHFLT	1 Cy
COMATKCARSTRIKEFORSEVENTHFLT (CTF 77)	1 Cy
CINCIANT	1 Cy
CINCSTRIKE	1 Cy
CINCSAC	1 Cy
SAC 544	1 Cy
CINCTAC	1 Cy
AFSTRIKE	1 Cy
CONTIC	1 Cy
CINCALCOM	1 Cy
CINCEUR	1 Cy
CINCUSAREUR	1 Cy
CINCUSAFE	1 Cy
CINCNAVEUR	1 Cy
CINCCONAD	1 Cy
CIA	125 Cys
ARMED FORCES STAFF COLLEGE	1 Cy
DIA	35 Cys

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